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FAREHAM BOROUGH LOCAL PLAN
Land north of Wicor Farm, Portchester
Fareham, Hampshire.

Agricultural Land Classification
ALC Map and Report

October 1997

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

FAREHAM BOROUGH LOCAL PLAN
LAND NORTH OF WICOR FARM, PORTCHESTER, FAREHAM, HAMPSHIRE.

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 33.3 ha of land located to the north of Wicor Farm, Cranleigh Road, Portchester near Fareham in Hampshire. The survey was carried out during September and October1997.

2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)[1] on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with the Fareham Borough Local Plan. This survey supersedes any previous ALC information for this land.

3. The work was conducted by members of the Resource Planning Team in the Eastern Region of the FRCA. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4. At the time of survey land use on the site comprised permanent and rough grassland and land in stubble from recent cereal and pea crops. Some of the grassland was being used to graze horses and was becoming invaded by scrub. The areas mapped as 'Other land' include farm buildings and a footpath.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. It is accurate at this scale but any enlargement would be misleading.

6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
1	12.6	38.4	37.8
2	20.2	61.6	60.7
Other land	0.5	N/A	1.5
Total surveyed area	32.8	100	98.5
Total site area	33.3	-	100

[1] FRCA is an executive agency of MAFF and the Welsh Office

7. The fieldwork was conducted at an average density of approximately 1 boring per hectare of agricultural land. A total of 36 borings and 4 soil pits were described. One of these observations was the face of a pit opened to expose underground pipes.

8. The agricultural land on this site has been classified as Grade 1 (excellent quality) and Grade 2 (very good quality). The principal limitation to land quality is soil droughtiness.

9. Towards the east of the site, there are no significant limitations to land quality. The soils comprise a light silty topsoil overlying slightly stony medium silty subsoils. These are well drained and contain sufficient available water, given the local climate, to be classified as Grade 1.

10. Towards the west and south of the site the land has been assessed as being of Grade 2 quality. The profiles are well to moderately well drained and comprise slightly stony medium silty topsoils and subsoils. These occasionally overlie clayey lower subsoils and/or chalk. Given local climatic factors these soils have a lower amount of water available to plants, compared to the areas mapped as Grade 1; therefore Grade 2 is appropriate on the basis of slight soil droughtiness,. The minor droughtiness limitation means that crop yields and growth are likely to be adversely affected, especially in drier years.

FACTORS INFLUENCING ALC GRADE

Climate

11. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

12. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SU 600 055	SU 604 055
Altitude	m, AOD	5	5
Accumulated Temperature	day°C (Jan-June)	1551	1550
Average Annual Rainfall	mm	793	793
Field Capacity Days	days	160	160
Moisture Deficit, Wheat	mm	115	115
Moisture Deficit, Potatoes	mm	111	111
Overall climatic grade	N/A	Grade 1	Grade 1

13. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

14. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (ATO, January to June), as a measure of the relative warmth of a locality.

15. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. However, the site location close to Portsmouth harbour could lead to an exposure risk, although the area is not shown as such on an unpublished Met. Office map of the area (Met. Office, 1968). During the survey, there was no evidence of significant exposure across the site, in terms of wind pruning on perennial vegetation, such as trees and hedgerows, hence a Grade 1 climatic assessment has been assumed. Other local climatic factors such as frost risk are not believed to affect the site. The site benefits from a favourable growing environment due to high light levels (Met. Office, 1968).

Site

16. The site lies between approximately 2 and 7m AOD overall. The land rises gently from the south towards the north. Gradients within the site are slight and are not sufficient to adversely affect land quality. Other site factors such as microrelief and flooding are also not significant.

Geology and soils

17. The published geological information for the site (BGS, 1971) show the majority of the site to be underlain by brickearth drift deposits. Towards the north west of the site an area has been mapped as being underlain by river and valley gravel drift deposits.

18. The most detailed published soils information for the site (SSEW, 1983 and 1984) shows it to comprise soils of the Hamble 2 association. These are described as 'deep stoneless well drained silty soils and similar soils affected by groundwater; over gravel locally. Usually flat land.' (SSEW, 1983). The profiles examined at the site were silty, but they all contained some stones and were well to moderately well drained. None of the examined profiles contained gravel (>70% stones within 120cm). A few profiles, specifically towards the south of the site, were found to overlie weathered chalk between 65 and 110cm.

AGRICULTURAL LAND CLASSIFICATION

19. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

20. The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix II.

Grade 1

21. Land of excellent quality has been mapped towards the east of the site. There are no significant impediments to land quality in this area. The pit observation 1P, is representative of the soils in this map unit.

22. The soils in this area comprise silt loam topsoils overlying deep silt loam or medium to heavy silty clay loam subsoils. The profiles are typically very slightly to slightly stony (up to 10% flints by volume) throughout. In the subsoil, some flints were large and these caused the profile to be impenetrable to the soil auger in some cases during the survey. The pit observations confirmed that the soil resource is at least 120cm in these areas. Occasionally, where a heavy silty clay loam texture was identified in the subsoil, it was described as being slightly gleyed. The pit observation, 3P, shows that these horizons are permeable and as such this factor does not represent a significant restriction to the land quality, but indicates that this area may be affected by fluctuating groundwater. All these profiles are well drained and assigned to Wetness Class I; given the medium textured topsoils in the favourable local climate, they are appropriately placed in Grade 1. These soils also contain sufficient available water to ensure that drought stress to plants rarely occurs. This land is very versatile and suitable for a very wide variety of agricultural and horticultural uses, including the more demanding crops.

Grade 2

23. Land of very good quality has been mapped towards the west and south of the site. The land in this area is principally limited by soil droughtiness, with soil wetness and topsoil stoniness being equally limiting on occasion. The soil pit observations 2P, 3P and 4P represent the soil types observed.

23. The soils within this mapping unit are slightly variable. The most common profiles occurring comprise a medium silty clay loam topsoil, overlying similar or heavier (heavy silty clay loam, occasionally silty clay or clay) subsoil. The profiles were very slightly to moderately stony throughout (1-20% flints by volume). Locally, principally towards the south, the content of large (>2cm) flints in the topsoil was sufficient to limit land quality to Grade 2, being greater than 5% stones by volume. The majority of the profiles were well drained and assigned to Wetness Class I. However, in some local circumstances (eg, 4P) the clay lower subsoil horizon was found to be slowly permeable, giving rise to a Wetness Class II assessment. Given the topsoil texture (predominantly medium silty clay loam), such land is appropriately placed in Grade 2 due to a minor wetness limitation. The distribution of soils with this minor wetness limitation is not considered to be extensive.

24. All the profiles in the Grade 2 map unit are, however, slightly restricted in terms of the amount of water available for plant growth leading to this classification being most appropriate given the local climate. This minor droughtiness limitation has the effect of restricting plant growth and subsequently yields may be adversely affected in some years. Nevertheless, this is versatile land capable of growing a wide variety of crops.

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SOURCES OF REFERENCE

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Met. Office (1989) *Climatological Data for Agricultural Land Classification.* Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Soils of South East England. 1:250 000 Scale.* SSEW: Harpenden.

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APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL DATA

Contents:

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

Boring Header Information

1. **GRID REF**: national 100 km grid square and 8 figure grid reference.

2. **USE**: Land use at the time of survey. The following abbreviations are used:

ARA:	Arable	**WHT:**	Wheat	**BAR:**	Barley
CER:	Cereals	**OAT:**	Oats	**MZE:**	Maize
OSR:	Oilseed rape	**BEN:**	Field beans	**BRA:**	Brassicae
POT:	Potatoes	**SBT:**	Sugar beet	**FCD:**	Fodder crops
LIN:	Linseed	**FRT:**	Soft and top fruit	**FLW:**	Fallow
PGR:	Permanent pasture	**LEY:**	Ley grass	**RGR:**	Rough grazing
SCR:	Scrub	**CFW:**	Coniferous woodland	**OTH**	Other
DCW:	Deciduous woodland	**BOG:**	Bog or marsh	**SAS:**	Set-Aside
HTH:	Heathland	**HRT:**	Horticultural crops	**PLO:**	Ploughed

3. **GRDNT**: Gradient as estimated or measured by a hand-held optical clinometer.

4. **GLEY/SPL**: Depth in centimetres (cm) to gleying and/or slowly permeable layers.

5. **AP (WHEAT/POTS)**: Crop-adjusted available water capacity.

6. **MB (WHEAT/POTS)**: Moisture Balance. (Crop adjusted AP - crop adjusted MD)

7. **DRT**: Best grade according to soil droughtiness.

8. If any of the following factors are considered significant, 'Y' will be entered in the relevant column:

MREL:	Microrelief limitation	**FLOOD:**	Flood risk	**EROSN**:	Soil erosion risk
EXP:	Exposure limitation	**FROST**:	Frost prone	**DIST**:	Disturbed land
CHEM:	Chemical limitation				

9. **LIMIT**: The main limitation to land quality. The following abbreviations are used:

OC:	Overall Climate	**AE**:	Aspect	**ST**:	Topsoil Stoniness
FR:	Frost Risk	**GR**:	Gradient	**MR**:	Microrelief
FL:	Flood Risk	**TX**:	Topsoil Texture	**DP**:	Soil Depth
CH:	Chemical	**WE**:	Wetness	**WK**:	Workability
DR:	Drought	**ER**:	Erosion Risk	**WD**:	Soil Wetness/Droughtiness
EX:	Exposure				

Soil Pits and Auger Borings

1. **TEXTURE**: soil texture classes are denoted by the following abbreviations:

S:	Sand	**LS**:	Loamy Sand	**SL**:	Sandy Loam
SZL:	Sandy Silt Loam	**CL**:	Clay Loam	**ZCL**:	Silty Clay Loam
ZL:	Silt Loam	**SCL**:	Sandy Clay Loam	**C**:	Clay
SC:	Sandy Clay	**ZC**:	Silty Clay	**OL**:	Organic Loam
P:	Peat	**SP**:	Sandy Peat	**LP**:	Loamy Peat
PL:	Peaty Loam	**PS**:	Peaty Sand	**MZ**:	Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:

F: Fine (more than 66% of the sand less than 0.2mm)
M: Medium (less than 66% fine sand and less than 33% coarse sand)
C: Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content:
M: Medium (<27% clay) **H**: Heavy (27-35% clay)

2. **MOTTLE COL**: Mottle colour using Munsell notation.

3. **MOTTLE ABUN**: Mottle abundance, expressed as a percentage of the matrix or surface described:

F: few <2% **C**: common 2-20% **M**: many 20-40% **VM**: very many 40% +

4. **MOTTLE CONT:** Mottle contrast:

F: faint - indistinct mottles, evident only on close inspection
D: distinct - mottles are readily seen
P: prominent - mottling is conspicuous and one of the outstanding features of the horizon

5. **PED. COL**: Ped face colour using Munsell notation.

6. **GLEY:** If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.

7. **STONE LITH**: Stone Lithology - one of the following is used:

HR:	all hard rocks and stones	**FSST**:	soft, fine grained sandstone
ZR:	soft, argillaceous, or silty rocks	**CH**:	chalk
MSST:	soft, medium grained sandstone	**GS**:	gravel with porous (soft) stones
SI:	soft weathered igneous/metamorphic rock	**GH**:	gravel with non-porous (hard) stones

Stone contents (>2cm, >6cm and total) are given in percentages (by volume).

8. **STRUCT**: the degree of development, size and shape of soil peds are described using the following notation:

Degree of development	**WK**:	weakly developed	**MD**:	moderately developed
	ST:	strongly developed		
Ped size	**F**:	fine	**M**:	medium
	C:	coarse		
Ped shape	**S**:	single grain	**M**:	massive
	GR:	granular	**AB**:	angular blocky
	SAB:	sub-angular blocky	**PR**:	prismatic
	PL:	platy		

9. **CONSIST**: Soil consistence is described using the following notation:

L: loose	**FM**: firm	**EH**: extremely hard
VF: very friable	**VM**: very firm	
FR: friable	**EM**: extremely firm	

10. **SUBS STR**: Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G**: good **M**: moderate **P**: poor

11. **POR**: Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.

12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.

13. **SPL**: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

14. **CALC**: If the soil horizon is calcareous, a 'Y' will appear in this column.

15. Other notations:

APW:	available water capacity (in mm) adjusted for wheat
APP:	available water capacity (in mm) adjusted for potatoes
MBW:	moisture balance, wheat
MBP:	moisture balance, potatoes

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU59700570	STB			70		1	1	134	19	117	6	2				DR	2	SEE 3P
2	SU59790567	HRT					1	1	83	-32	86	-25	3B				DR	2	IMP 55 SEE 2P
3	SU59900570	STB					1	1	68	-47	68	-43	3B				DR	2	IMP40 SEE2P/3P
4	SU60000570	STB			52		1	1	96	-19	102	-9	3A				DR	2	IMP 60 SEE 3P
5	SU60100570	STB					1	1	94	-21	94	-17	3B					1	IMP 45 SEE 1P
6	SU59610560	STB					1	1	82	-33	85	-26	3B				DR	2	IMP 55 SEE 2P
7	SU59700560	STB					1	1	106	-9	115	4	3A				DR	2	IMP 75 SEE 2P
8	SU59800560	STB	SW	1			1	1	99	-16	110	-1	3A				DR	2	IMP 68 SEE 2P
9	SU59900560	STB					1	1	104	-11	117	6	3A				DR	2	IMP 70 SEE 3P
10	SU60000560	STB			55		1	1	106	-9	111	0	3A				DR	2	IMP 80 SEE 3P
11	SU60100560	STB					1	1	87	-28	87	-24	3B				DR	2	IMP45 SEE1P/3P
12	SU60200560	STB					1	1	161	46	134	23	1					1	SEE 1P/3P
13	SU60300560	RGR					1	1	133	18	135	24	2					1	IMP 82 SEE 1P
14	SU60400560	RGR					1	1	120	5	129	18	3A					1	IMP 75 SEE 1P
15	SU59600550	STB					1	1	121	6	114	3	2				DR	2	IMP 90 SEE 4P
16	SU59700550	STB					1	1	85	-30	87	-24	3B				DR	2	IMP 55 SEE 3P
17	SU59800550	STB					1	1	119	4	107	-4	3A				DR	2	IMP 95 SEE 4P
18	SU59900550	STB					1	1	97	-18	103	-8	3A				DR	2	IMP 60 SEE 3P
19	SU60000550	STB			42		1	1	82	-33	82	-29	3B				DR	2	IMP 50 SEE 3P
20	SU60100550	STB					1	1	168	53	132	21	1					1	SEE 1P
21	SU60200550	STB					1	1	122	7	135	24	2					1	IMP 70 SEE 1P
22	SU60300550	RGR					1	1	171	56	136	25	1					1	SEE 1P
23	SU60400550	PGR					1	1	164	49	129	18	1					1	SEE 1P
24	SU59700540	STB					1	1	89	-26	92	-19	3B				DR	2	IMP 55 SEE 2P
25	SU59800540	STB					1	1	111	-4	109	-2	3A				DR	2	IMP 75 SEE 4P
26	SU60100540	STB					1	1	82	-33	82	-29	3B					1	IMP 40 SEE 1P
27	SU60200540	STB					1	1	179	64	143	32	1					1	SEE 1P
28	SU60300540	PGR			62		1	1	130	15	130	19	2				TS	2	IMP 85 SEE 1P
29	SU60400540	PGR					1	1	151	36	152	41	1					1	SEE 1P
30	SU60100530	STB					1	1	115	0	119	8	3A				DR	2	IMP 80 SEE 2P
31	SU60200530	STB					1	1	165	50	130	19	1					1	SEE 1P
32	SU60300530	STB					1	1	97	-18	106	-5	3A				DR	2	SEE 3P
33	SU60100520	STB					1	1	109	-6	123	12	3A				DR	2	IMP 70 SEE 2P
34	SU60200520	STB					1	1	90	-25	93	-18	3B				DR	2	IMP 55 SEE 2P
35	SU60300520	STB					1	1	138	23	133	22	2				DR	2	IMP90 SEE1P/4P
36	SU59620570	STB					1	1	68	-47	69	-42	3B				DR	2	IMP55 SEE2P/4P
1P	SU60200550	STB			80		1	1	161	46	128	17	1					1	PIT 90 AUG 120
2P	SU59700560	STB					1	1	150	35	120	9	2				DR	2	PIT 80 AUG 120
3P	SU60000570	STB			55		1	1	141	26	116	5	2				DR	2	PIT 90 AUG 120
4P	SU60300536	PGR				78	2	2	132	17	117	6	2				WD	2	EXCAVATION120+

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
1P	0-28	ZL	10YR42						1	0	HR	4							
	28-65	MZCL	10YR44 54				10YR54		0	0	HR	5	MDCSAB	FR	M	N			
	65-80	MZCL	10YR44 54						0	0	HR	25		FR	M	N			
	80-120	HZCL	10YR54 64	10YR58	C	D		Y	0	0	HR	5		FR	M	N			
2P	0-31	MZCL	10YR34						2	0	HR	3							
	31-46	MZCL	10YR44						0	0	HR	3	MDVCSB	FR	M				
	46-60	MZCL	10YR54 56						0	0	HR	4	MDVCSB	FR	M				
	60-120	HZCL	10YR44 56						0	0	HR	14	MDVCSB	FM	M				
3P	0-28	MZCL	10YR43						4	2	HR	5							
	28-55	HZCL	10YR44						0	0	HR	5	MVCSAB	FR	M				
	55-74	HZCL	10YR53	10YR56	C	D		Y	0	0	HR	15	MDCSAB	FR	M				
	74-120	C	10YR53	10YR56	C			Y	0	0	HR	8	MDCSAB	FR	M				
4P	0-30	MZCL	10YR42						2	0	HR	5							
	30-52	MZCL	10YR44						0	0	HR	10	MDCSAB	FR	M	N			
	52-78	HZCL	10YR54	10YR56	F	F	10YR44		0	0	HR	5	MDCSAB	FR	M	N			
	78-110	ZC	75YR44	10YR68	C	D		S	0	0	HR	10	WKCSAB	FM	P	Y	Y		TENDS AB
	110-120	CH	10YR81 64						0	0	HR	5			P			Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
1	0-30	MZCL	10YR41 42						2	0	HR	8							SEE 3P
	30-70	HZCL	10YR44 54	10YR66	C	F		S	0	0	HR	5		M					SLIGHTLY GLEYED
	70-120	ZC	10YR42	10YR66	C	D	MN	Y	0	0	HR	15		M					
2	0-30	MZCL	10YR42						5	2	HR	10							SEE 2P
	30-55	HZCL	10YR46						0	0	HR	20		M					IMP FLINTS 55
3	0-35	MZCL	10YR34						5	0	HR	10							SEE 2P/3P
	35-40	HZCL	10YR44						0	0	HR	10		M					IMP FLINTS 40
4	0-35	MZCL	10YR43						3	0	HR	5							SEE 3P
	35-52	HZCL	10YR44						0	0	HR	1		M					
	52-60	C	10YR53	10YR56	C	D		Y	0	0	HR	3		M					IMP FLINTS 60
5	0-35	ZL	10YR42						0	0	HR	2						Y	SEE 1P +2% CHALK
	35-45	MZCL	10YR43 44	MN		F			0	0	HR	4		M					IMPFLINTS45 +2%CH
6	0-33	MZCL	10YR32 42						5	3	HR	12						Y	SEE 2P +2% CHALK
	33-55	MZCL	10YR44	MN		F			0	0	HR	15		M				Y	IMPFLINTS55+15%CH
7	0-30	MZCL	10YR42						3	1	HR	10							SEE 2P
	30-60	MZCL	10YR43 44						0	0	HR	5		M					
	60-75	MZCL	10YR54	10YR66	F	F			0	0	HR	15		M					IMP FLINTS 75
8	0-30	MZCL	10YR42						8	3	HR	10							SEE 2P
	30-68	MZCL	10YR44						0	0	HR	10		M					IMP FLINTS 68
9	0-28	MZCL	10YR34						4	0	HR	8							SEE 3P
	28-55	HZCL	10YR44						0	0	HR	5		M					
	55-70	HZCL	10YR44	10YR46	F				0	0	HR	5		M					IMP FLINTS 70
10	0-35	MZCL	10YR43						3	0	HR	8							SEE 3P
	35-55	HZCL	10YR44 43						0	0	HR	10		M					
	55-80	C	10YR53	10YR46	C	D		Y	0	0	HR	4		M					IMP FLINT 80
11	0-30	ZL	10YR42 43						0	0	HR	5							SEE 1P/3P
	30-45	C	10YR44	10YR46 56	C		MN	S	0	0	HR	10		M					IMPFLINTS45 SLGL
12	0-30	ZL	10YR42 43						0	0	HR	2							SEE 1P/3P
	30-45	MZCL	10YR44	MN		F			0	0	HR	2		M					
	45-90	HZCL	10YR44						0	0	HR	2		M					
	90-120	C	10YR44	10YR46 56	C		MN	S	0	0	HR	2		P					SLIGHTLY GLEYED
13	0-23	ZL	10YR42 43		C	F			3	2	HR	3							SEE 1P
	23-35	ZL	10YR43						0	0	HR	3		M					
	35-82	MZCL	10YR44						0	0	HR	3		M					IMP FLINT 82
14	0-23	ZL	10YR42						3	0	HR	3							SEE 1P
	23-75	MZCL	10YR44						0	0	HR	3		M					IMP FLINTS 75

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
15	0-28	MZCL	10YR33 43						3	1	HR	12					Y		SEE 4P +1% CHALK
	28-45	MZCL	10YR44						0	0	HR	5		M			Y		
	45-60	HZCL	10YR46						0	0	HR	3		M			Y		
	60-80	ZC	10YR46	MN		F			0	0	HR	3		M			Y		
	80-100	CH	10YR81 54						0	0	HR	5		P			Y		I90 RT100 20%SOIL
16	0-30	MZCL	10YR32 42						2	0	HR	8							SEE 3P
	30-50	ZC	10YR44	MN		C			0	0	HR	5		M					
	50-55	ZC	10YR44 46	MN		C			0	0	HR	20		M					IMP FLINTS 55
17	0-30	MZCL	10YR32 42						5	1	HR	12							SEE 4P
	30-45	HZCL	10YR44 46						0	0	HR	5		M					
	45-60	ZC	10YR46	MN		F			0	0	HR	15		M					
	60-75	ZC	10YR56	MN		C			0	0	HR	15		M					
	75-90	HZCL	10YR56						0	0	HR	5		M			Y		
	90-100	CH	10YR81 56						0	0	HR	5		P			Y		I95 RT100 20%SOIL
18	0-38	MZCL	10YR33						4	0	HR	7							SEE 3P
	38-45	MZCL	10YR34 43						0	0	HR	2		M					
	45-60	HZCL	10YR44						0	0	HR	5		M					IMP FLINTS 60
19	0-32	MZCL	10YR33						4	0	HR	8							SEE 3P
	32-42	HZCL	10YR44						0	0	HR	5		M					
	42-50	C	10YR53	10YR46	C	D	MN	Y	0	0	HR	10		P					IMP FLINT 50
20	0-30	ZL	10YR42						2	0	HR	5							SEE 1P
	30-120	HZCL	10YR44 46	MN		C			0	0	HR	2		M					
21	0-32	ZL	10YR42						0	0	HR	2							SEE 1P
	32-60	MZCL	10YR44						0	0	HR	2		M					
	60-70	HZCL	10YR54						0	0	HR	5		M					IMP FLINT 70
22	0-20	ZL	10YR42						2	1	HR	2							SEE 1P
	20-35	ZL	10YR43						0	0	HR	2		M					
	35-120	MZCL	10YR44						0	0	HR	2		M					
23	0-20	ZL	10YR42		C	F			3	0	HR	3							SEE 1P
	20-30	MZCL	10YR43		C	F			0	0	HR	3		M					
	30-120	MZCL	10YR44						0	0	HR	1		M					
24	0-30	MZCL	10YR32 42						1	0	HR	5					Y		SEE 2P +2% CHALK
	30-55	MZCL	10YR44 54	MN		F			0	0	HR	10		M			Y		IMP FLINTS 55
25	0-25	MZCL	10YR32						1	0	HR	5					Y		SEE 4P +2% CHALK
	25-40	HZCL	10YR44						0	0	HR	5		M			Y		+5% CHALK
	40-60	ZC	10YR44 54	MN		F	D		0	0	HR	5		M			Y		+5% CHALK
	60-65	HZCL	10YR54						0	0	CH	25		M			Y		+5% FLINTS
	65-90	CH	10YR81 64						0	0	HR	5		P			Y		IMPCHALK75 RTS90

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
26	0-30	ZL	10YR42 43						0	0	HR	5							SEE 1P
	30-40	MZCL	10YR44						0	0	HR	5		M					IMP FLINTS 40
27	0-32	ZL	10YR42 43						0	0	HR	2							SEE 1P
	32-48	ZL	10YR44						0	0	HR	2		M					
	48-120	HZCL	10YR44	10YR56 58	F		MN		0	0	HR	2		M					
28	0-20	ZL	10YR42						6	3	HR	6							SEE 1P
	20-32	ZL	10YR43						0	0	HR	7		M					
	32-62	MZCL	10YR44						0	0	HR	5		M					
	62-85	MZCL	10YR44 52	10YR58	C	F		Y	0	0	HR	5		M					IMP FLINTS 85
29	0-23	ZL	10YR42		C	F			3	0	HR	3							SEE 1P
	23-35	ZL	10YR43						0	0	HR	3		M					
	35-80	MZCL	10YR44						0	0	HR	3		M					IMP FLINTS 80
30	0-30	MZCL	10YR33						4	0	HR	8							SEE 2P
	30-70	MZCL	10YR44						0	0	HR	3		M					
	70-80	MZCL	10YR44 46						0	0	HR	1		M					IMP FLINTS 80
31	0-28	ZL	10YR42 43						4	2	HR	8							SEE 1P
	28-60	MZCL	10YR44	MN		C			0	0	HR	2		M					
	60-120	HZCL	10YR44 54	MN		F			0	0	HR	2		M					
32	0-30	ZL	10YR42 43						6	2	HR	10							SEE 1P/3P
	30-65	C	10YR44 54	10YR56 58	C		MN	S	0	0	HR	5		M					IMP FLINT 65 SLGL
33	0-30	MZCL	10YR43						0	0		0					Y		SEE 2P
	30-55	MZCL	10YR43 44						0	0	HR	5		M			Y		
	55-70	HZCL	10YR44						0	0	HR	2		M			Y		IMP FLINTS 70
34	0-30	MZCL	10YR33						5	0	HR	8							SEE 2P
	30-55	MZCL	10YR44						0	0	HR	5		M					IMP FLINTS 55
35	0-28	ZL	10YR42						2	1	HR	2							SEE 1P/4P
	28-55	MZCL	10YR43						0	0	HR	2		M					
	55-85	MZCL	10YR44	MN		F			0	0	HR	2		M					
	85-90	CH	10YR81						0	0	HR	2		P			Y		IMP CHALK 90
36	0-30	MZCL	10YR43						4	1	HR	20					Y		+2% CHALK
	30-55	MZCL	10YR54 81						0	0	CH	70		P			Y		IMPCHDR70 +10%HR